James Andreoni and Lise Vesterlund, "Which is the Fair Sex? Gender Differences in Altruism." Quarterly Journal of Economics, 116 (1), February 2001, 293-312.

1 Introduction

- Public Goods

  – Brown-Kruse and Hummels (1993) **Males more cooperative.**

  – Nowell and Tinkler (1994) **Females more cooperative.**

- Ultimatum

  – Eckel and Grossman (1996) **Same in offers, females accept more unfairness.**

  – Solnick (1995) **No difference in actions, but females are expected to cooperate more.**

- Dictator Games

  – Bolton and Katok (1995) **No difference.**

  – Eckel and Grossman (1997) **Females more cooperative.**

- Psychology Literature

  – Also lots of studies and lots of variance.

Why should we care about sex differences?

1. Are differences in altruism systematic? predictable?

2. Methodological question for experiments.

   – Should we report sex ratios?

2 Experimental Design

- Use the data from Andreoni and Miller (2002)

- Note: do not recruit based on sex or use same-sex groups.

# 3 Results

- No difference in mean, but big variation

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TABLE 2

Mean Payoff to other Party

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Budget	Token Endowment	Income m	p_o/p_s	All Subjects	Male Subjects	Female Subjects	t-stat
1	40	4.00	1/3	3.79	4.18	3.01	1.96
2	60	6.00	1/2	4.02	4.30	3.49	1.48
3	75	7.50	1/2	4.68	5.00	4.03	1.53
4	60	6.00	1	1.54	1.36	1.91	-2.26
5	100	10.00	1	2.52	2.33	2.92	-1.42
6	60	12.00	2	1.42	1.21	1.82	-2.07
7	75	15.00	2	1.71	1.42	2.29	-2.35
8	40	12.00	3	0.89	0.67	1.32	-2.97
Average				2.57	2.56	2.60	-0.24

Notice there is no significant difference on average. However, it would be misleading to stop there. When we look across all 8 budgets there seems to be real systematic differences.
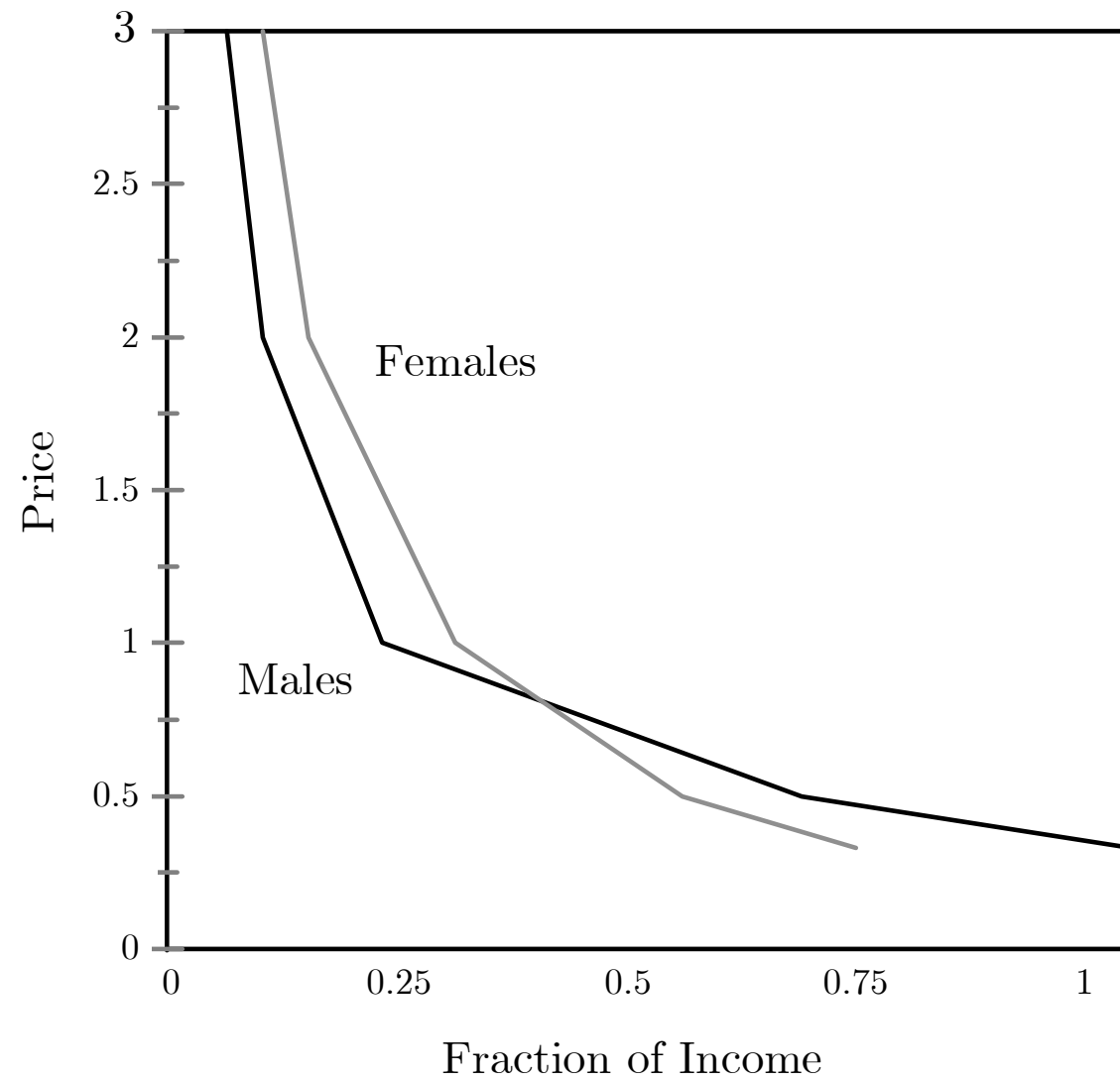
Analysis of Utility Functions

- Separate out as in Andreoni and Miller

TABLE 4

Subject Classification by Prototypical Utility Function

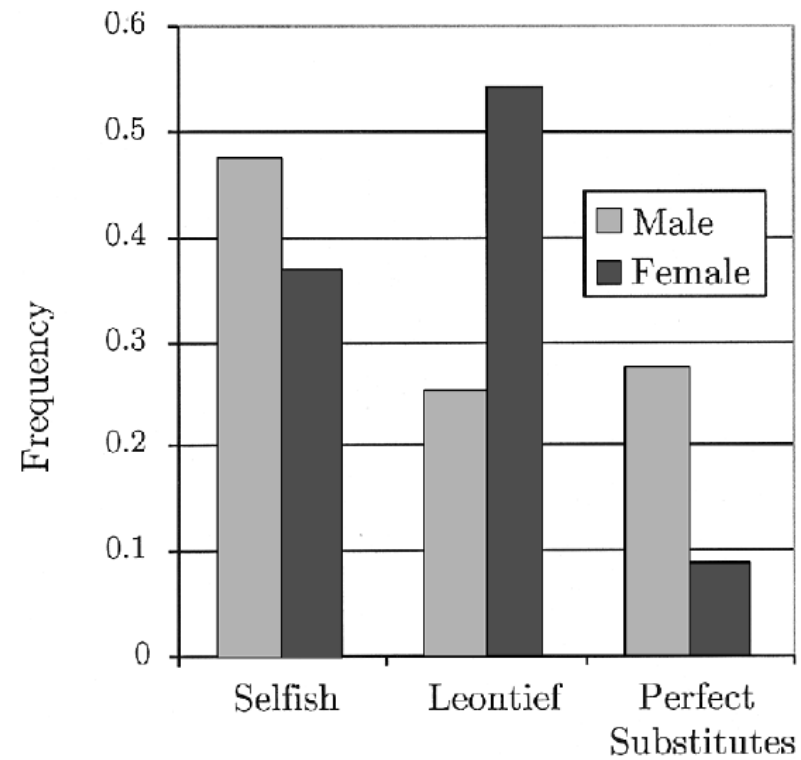| Utility Function	Male			Female		
	Strong	Weak	Total	Strong	Weak	Total
Selfish	24	21	45	7	10	17
Leontief	13	11	24	10	15	25
Perfect Substitutes	8	18	26	0	4	4

FIGURE II
Preference Distribution (Strong and Weak)

Note:

- Women more likely to be Leontief, Men more likely to be other extremes
- Fits with Gilligan (1982) that men are "instrumentalists" and women are "contextualists."
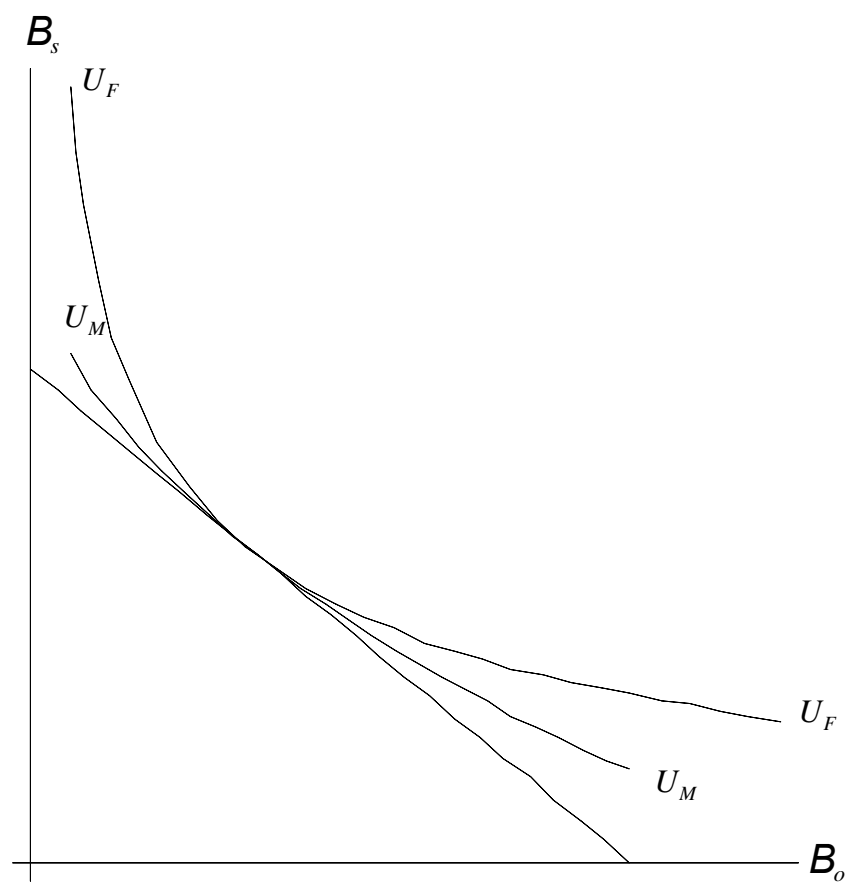
Demand Functions: $U_i = [\alpha \pi_s^\rho + (1-\alpha)\pi_o^\rho]^{1/\rho}$
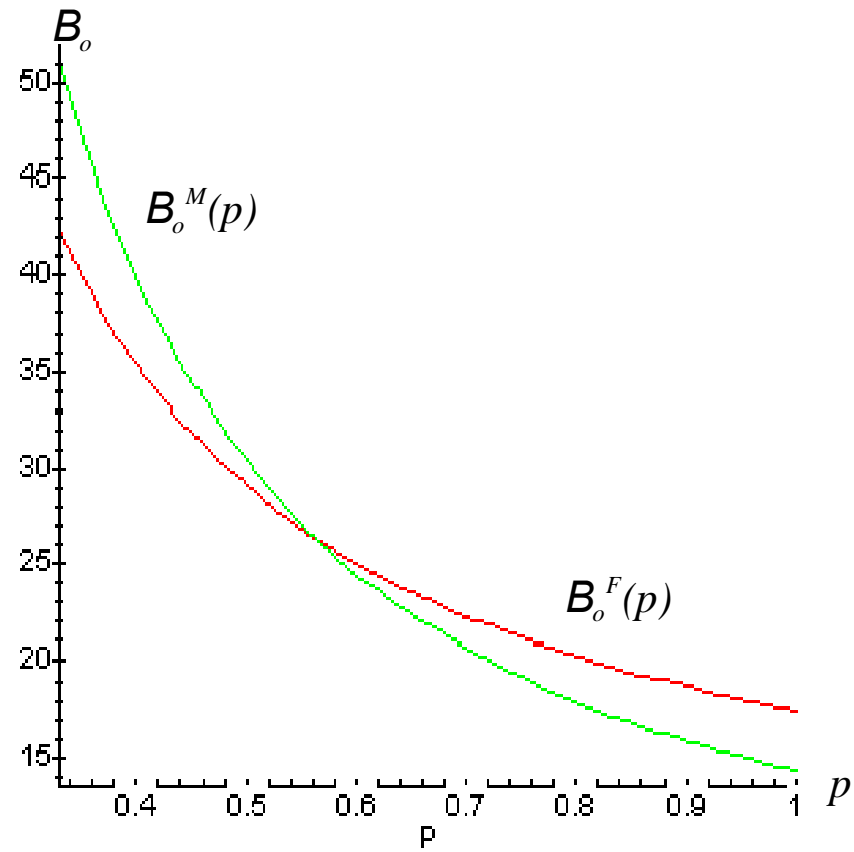
TABLE 6
Estimates of CES Demand Functions

	Male and Female	Female	Male
Demand for π_o	$\dfrac{p^{-1.84}m}{p^{-0.84}+5.66}$	$\dfrac{p^{-0.93}m}{p^{0.07}+3.04}$	$\dfrac{p^{-2.66}m}{p^{-1.66}+10.79}$
$\epsilon_o(p=0.5)$	-1.35	-0.87	-1.72

Note:

- Male and Female parameters are significantly different ($\chi^2_{[3]} = 71.64$)

- $\alpha_M =, 0.71$, $\alpha_F = 0.77$, not significantly different ($t = -1.61$)

- $\rho_M = -2.66$, $\rho_F = -0.93$, is significantly different ($t = 4.78$).

- Males are more price elastic.

B_s

U_F

U_M

U_F

U_M

B_o

Male and Female CES Indifference Curves

Male and Female CED Demands at $m = 60$.

TABLE 7

Estimates of Weak CES Demand Functions

	Male and Female	Female	Male
A	3.25(0.25)	2.72(0.25)	3.84(0.48)
r	-0.80(0.10)	-0.28(0.12)	-1.20(0.16)
N	632	232	400
In Likelihood	-248.64	-67.72	-169.61
$\epsilon_o(p = 0.5)$	-1.51	-1.18	-1.74

Note: numbers in parentheses are standard errors of the coefficient estimates.

- Males and females in the weak type are more similar, but still significantly different ($\chi^2_{[3]} = 22.62$).

- Aggregate demands are

$$\pi_o(p, m) = q_w \pi_o^w(p, m) + q_l \pi_o^l(p, m) + q_{ps} \pi_o^{ps}(p, m) + q_f \pi_o^f(p, m)$$

- Male and female aggregate demands are significantly different a $\chi^2_{[6]} = 34.80$.

- Note, around $p = 1$ the two are similar.
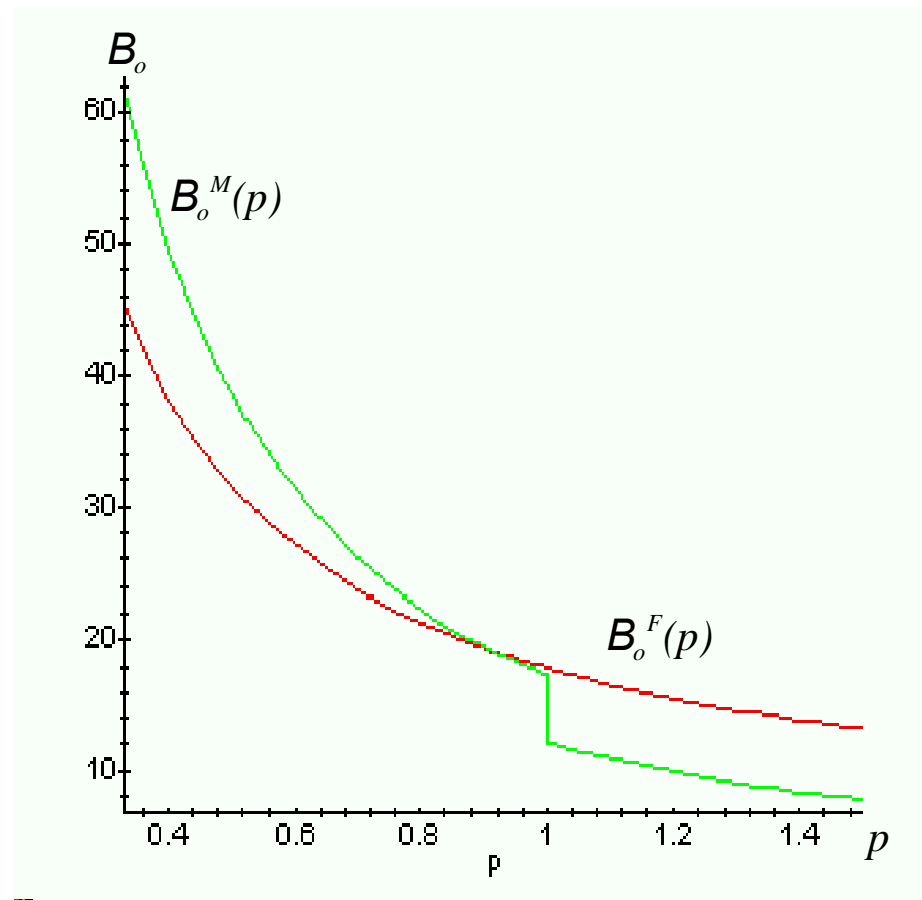
Aggregate CES demand curve at $m = 60$.

4 Comparison to Other Studies

Difficult to do since others tend to be all male or all female groups. Still, we can put some organization on the data

5 Conclusion

- No difference on average, but difference in variance.

- Males are more likely to be either perfectly selfish or to maximize total payoffs of both subjects

- Females are more likely to insist on equality.

- Males give more when it is cheap, females when it is expensive – demand curves cross.

- Perhaps we should have gender-balanced experiments, especially when altruism in involved.